

Supporting Information

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SI Text

Animal Housing. Mice were housed in open-top cages, on a 12-h light/12-h dark cycle, with ad libitum access to water and food (standard RM1 diet, Special Diets Services). Regular health screening was carried out to Federation of European Laboratory Animal Science Associations guidelines; no bacterial infections were detected, although a low level of unidentified coronavirus and murine norovirus infection was recorded. However, regular veterinary inspection found no evidence of any clinical symptoms.

LOH Analysis. To detect LOH in adenomas, we used a PCR method which utilized mismatched primers as described in ref. 1. Briefly, amplification of the *Apc^{Min}* allele produces a 155-bp product containing a single HindIII site, in contrast to the 155-bp PCR product generated from the *Apc⁺* allele, which contains two HindIII sites. Following HindIII digestion of an *Apc^{Min/+}* sample, two products are produced: a 123-bp product from the *Apc⁺* allele and a 144-bp product from the *Apc^{Min}* allele. However, in tissue in which LOH has occurred, only one band is generated (144 bp) from the remaining *Apc^{Min}* allele.

Tissue Harvest. The last 5 cm of the distal colon was harvested from 10-week-old mice and immediately frozen. The frozen tissue was then ground into a fine powder using a pestle and mortar containing liquid nitrogen. The ground tissue was then weighed and three times weight-to-volume added of tissue lysis

buffer (50 mM Tris·HCl pH 7.5, 1 mM EDTA, 1 mM EGTA, 1 mM sodium orthovanadate, 10 mM sodium β -glycerophosphate, 50 mM sodium fluoride, 5 mM sodium pyrophosphate, 0.27 M sucrose, 1% (vol/vol) Triton x-100, 0.1% (vol/vol) 2-mercaptoethanol, and protease inhibitor mixture (one tablet/50 ml). The lysates were then centrifuged at $16,000 \times g$ for 10 min at 4 °C and the supernatants stored at -20 °C.

Immunoblotting. Samples were denatured in SDS before being run on polyacrylamide gels, after which they were transferred to nitrocellulose membranes. The membranes were then blocked for 1 h at room temperature in 50 mM Tris·HCl pH 7.5, 150 mM NaCl, 0.2% Tween (TBST), and 5% skimmed milk powder. Membranes were then incubated overnight at 4 °C with gentle rocking with antisera to *Gstp1*, *Gstm1*, *Gsta1* NQ01, HO-1 (Abcam) or actin (Sigma) in TBST 5% BSA. The following day, membranes were washed three times with TBST (5 min per wash) and then exposed to secondary antibody in TBST containing 5% (wt/vol) skimmed milk powder. Membranes were then washed four times with TBST (5 min per wash) and immunoreactive proteins visualised with ECL plus (Amersham) reagent according to the manufacturer's instructions. Stripping of membranes, if required, was accomplished using Re-Blot Plus mild antibody stripping solution (Chemicon International).

DNA Adduct Determination. Oxidative DNA adducts were determined as described in ref. 2.

1. Luongo C, Moser AR, Gledhill S, Dove WF (1994) Loss of *Apc⁺* in intestinal adenomas from *Min* mice. *Cancer Res* 54:5947–5952.
2. Singh R, et al. (2009) Simultaneous determination of 8-oxo-2'-deoxyguanosine and 8-oxo-2'-deoxyadenosine in DNA using online column-switching liquid chromatography/tandem mass spectrometry. *Rapid Commun Mass Spectrom* 23:151–160.

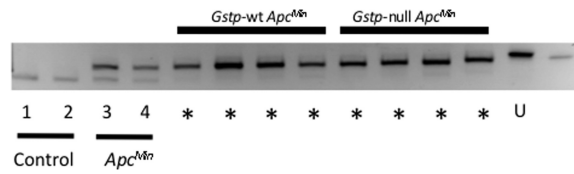


Fig. S1. LOH analysis. *Apc* LOH analysis of colon adenomas. (*Top band*) HindIII-digested *Apc^{Min}* PCR product; (*Bottom band*) wild-type *Apc* allele cut by HindIII. (*Lane 1*) Normal-appearing colonic crypts from a *Gstp1/p2^{+/+}* mouse; (*Lane 2*) normal-appearing colonic crypts from a *Gstp1/p2^{-/-}* mouse; (*Lane 3*) normal-appearing colonic crypts from a *Gstp-wt Apc^{Min}* mouse; (*Lane 4*) normal-appearing colonic crypts from a *Gstp-null Apc^{Min}* mouse; (*Lane U*) undigested PCR product. The band ratio (*Apc⁺/Apc^{Min}*) in each sample was compared with the control lane. Asterisks represent colon adenomas showing a low band ratio (*Apc⁺/Apc^{Min}*) and, therefore, LOH.

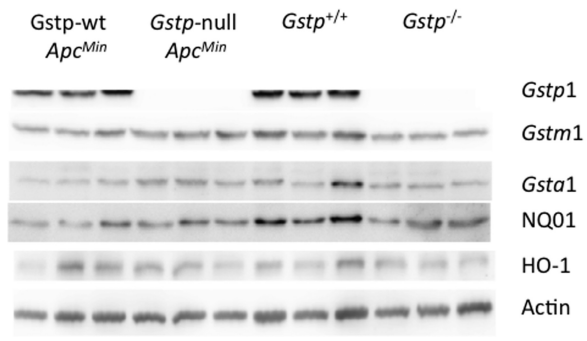


Fig. S2. Immunoblotting of colon tissue. Western blot analysis of colon tissue harvested from 10-week-old mice showing lack of induction of common oxidative stress genes between *Gstp*-wt *Apc*^{Min} and *Gstp*-null *Apc*^{Min} mice, or between *Gstp*-wt and *Gstp*-null mice. For further details, see the [SI Text](#).

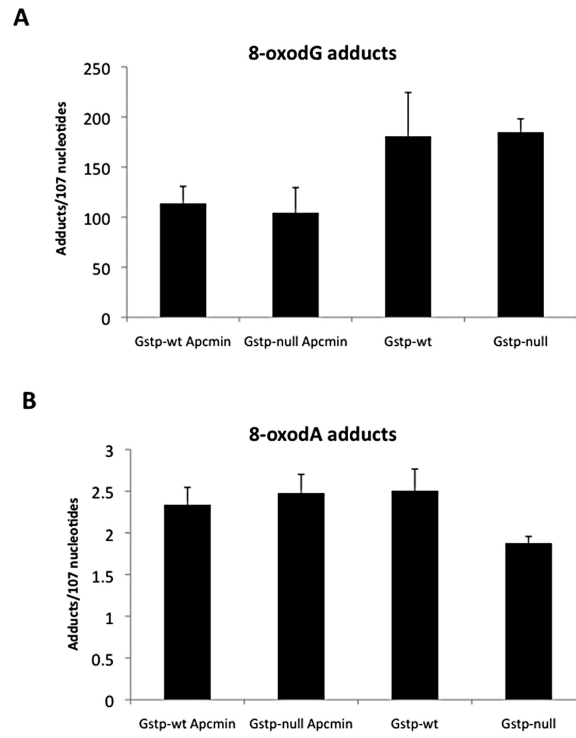


Fig. S3. DNA adduct levels Comparison of (A) 8-oxodG and (B) 8-oxodA levels in mouse colon DNA. The error bars represent standard error of the mean of the average of between three and four individual animals per genotype investigated.

Table S1.

Accession ID	Gene Symbol	Fold Change	SD	Accession ID	Gene Symbol	Fold Change	SD
NM_011314	Saa2	449	4.1	NM_029627	Ly6k	4.4	1.2
NM_177744	9030421J09Rik	229	1.7	NM_009695	Apoc2	4.4	1.2
NM_009117	Saa1	185	4.0	BC098210	Pla2 g4b	4.3	1.4
AK017277	5430405N12Rik	91	1.2	NM_175181	2600010E01Rik	4.3	1.3
NM_008570	Mcpt1	71	1.7	NM_007695	Chi3l1	4.3	1.3
NM_008571	Mcpt2	66	1.7	NM_145457	Paip1	4.2	1.2
NM_010779	Mcpt4	50	1.5	NM_032541	Hamp1	4.2	1.4
NM_010782	Mcpt9	50	1.3	AK013806	2900079G21Rik	4.2	1.4
BQ938713	Pla2 g2a	47	2.0	AK019808	ENSMUST00000056619	4.2	1.1
NM_010779	Mcpt4	46	1.5	AK018656	Fer1l4	4.2	1.2
AK136384	AK136384	38	1.1	NM_172523	Slc18a2	4.1	1.2
NM_009117	Saa1	27	2.6	AK041055	AK041055	4.1	1.1
NM_011315	Saa3	24	2.3	BC016255	Pla2 g4b	4.0	1.4
NM_010370	Gzma	20	1.5	AK013531	2900016B01Rik	4.0	1.2
NM_007753	Cpa3	20	1.4	NM_028815	Lrriq2	4.0	1.4
AK041235	Igh-4	19	1.7	NM_008399	Itgae	4.0	1.1
AK041235	Igh-4	19	1.7	NM_001034037	1700024G13Rik	3.9	1.2
X87228	Igh-4	18	1.7	NM_130904	Cd209d	3.9	1.2
NM_027028	1700008P20Rik	15	1.7	NM_008196	Gzmk	3.9	1.4
M22933	ENSMUST00000003868	13	1.7	AK011866	2610203C22Rik	3.9	1.5
NM_013748	Clnk	11	1.4	NM_010604	Kcnj16	3.9	1.5
NM_010184	Fcer1a	11	1.2	AK047982	Rtn4	3.9	1.4
AK033677	2210010C17Rik	11	1.3	NM_031367	H28	3.8	1.4
NM_019779	Cyp11a1	11	1.2	NM_009556	Zfp42	3.8	1.3
NM_008324	Indo	11	1.6	NM_201645	Ugt1a1	3.8	1.3
NM_010326	Gp1ba	11	1.3	NM_153484	Tef	3.7	1.4
NM_133353	Oosp1	11	1.3	NM_008812	Padi2	3.7	1.2
AK008696	2210010C17Rik	9.3	1.3	AK085190	D530004J12Rik	3.6	1.3
NM_133353	Oosp1	9.3	1.3	NM_023137	Ubd	3.6	1.4
NM_175531	Mrgprb2	9.1	1.5	NM_172944	Itgae	3.6	1.1
NM_080288	Elmo1	8.3	1.2	AJ294737	ENSMUST00000003582	3.6	1.3
XM_978574	1700124P09Rik	8.3	1.2	NM_021283	Il4	3.5	1.2
NM_026184	Ero1lb	7.9	1.3	NM_138654	AF397014	3.5	1.3
AK088994	AK088994	7.9	1.3	NM_010401	Hal	3.5	1.2
NM_009252	Serpina3n	7.2	1.5	AK045575	Tef	3.5	1.4
NM_177820	9130218O11Rik	7.1	1.3	NM_028772	Dmgdh	3.5	1.4
AK033022	AK033022	7.1	1.4	NM_031367	H28	3.5	1.4
BC030896	Pdgfd	6.6	1.7	NM_025997	2610204K14Rik	3.5	1.4
NM_175391	2210421G13Rik	6.5	1.4	NM_008370	Il5ra	3.4	1.4
AK170776	ENSMUST000000066907	6.1	1.1	NM_024253	Nkg7	3.4	1.2
NM_019779	Cyp11a1	6.1	1.2	NM_010251	Gabra4	3.4	1.4
NM_013542	Gzmb	6.0	1.4	NM_024253	Nkg7	3.4	1.2
AK033329	AK033329	6.0	1.1	AK054077	Al314180	3.3	1.3
AK051460	Adarb2	5.8	1.4	NM_181596	Retnlg	3.3	1.4
NM_001025602	Il1rl1	5.7	1.2	NM_009977	Cst7	3.3	1.1
NM_015819	Hs6 st2	5.7	1.2	XR_002113	LOC667984	3.3	1.2
XM_618738	Lats1	5.5	1.2	U59155	Igk-V19-14	3.3	1.4
NM_013516	Ms4a2	5.4	1.2	NM_026158	0610042E07Rik	3.3	1.3
TC1510329	TC1510329	5.2	1.4	NM_021386	Cldn10	3.2	1.3
NM_010604	Kcnj16	4.9	1.6	AK088128	Cd8a	3.2	1.2
BC092269	Ighg	4.9	1.3	NM_019577	Ccl24	3.2	1.3
NM_010781	Mcpt6	4.9	1.3	NM_001033177	Krt76	3.2	1.3
NM_053113	Ear11	4.8	1.3	AK050122	BC020489	3.2	1.3
NM_028443	3110032G18Rik	4.8	1.3	NM_020509	Retnla	3.2	1.3
NM_175391	2210421G13Rik	4.7	1.3	NM_020509	Retnla	3.1	1.3
AK080874	Depdc6	4.7	1.5	NM_021792	ligp1	3.1	1.4
AK084367	AK084367	4.7	1.2	NM_029898	Ankrd55	3.1	1.4
NM_010780	Cma1	4.6	1.2	NM_011066	Per2	3.1	1.3
BC030679	Cd8a	4.6	1.2	NM_130905	Cd209e	3.1	1.4
NM_010780	Cma1	4.6	1.2	AK161130	4933439C20Rik	3.0	1.1
NM_021443	Ccl8	4.6	1.2	NM_013653	Ccl5	3.0	1.3
NM_001024468	Bcat1	4.6	1.4	XM_284386	ENSMUST00000078702	3.0	1.3
NM_001001500	9830163H01Rik	4.5	1.5	NM_138684	Wfdc12	3.0	1.3
NM_145457	Paip1	4.5	1.3	XM_001003829	LOC193676	3.0	1.3
				NM_029865	9430098E02Rik	3.0	1.2

Accession ID	Gene Symbol	Fold Change	SD	Accession ID	Gene Symbol	Fold Change	SD
BC033508	Ccl5	3.0	1.3	NM_008330	Ifi47	2.5	1.2
AK088370	Ssb	3.0	1.3	NM_175271	Gpr23	2.5	1.3
NM_021718	Ms4a4b	3.0	1.2	NM_010531	Il18bp	2.5	1.2
NM_153484	Tef	3.0	1.3	AK136456	Al451617	2.5	1.3
NM_001033335	Serpina3f	3.0	1.3	NM_016808	Usp2	2.4	1.2
NM_026972	Cd209b	2.9	1.2	NM_011216	Ptpro	2.4	1.2
NM_138654	AF397014	2.9	1.2	NM_026621	2810046M22Rik	2.4	1.1
NM_033079	D6Mm5e	2.9	1.3	NM_012046	Spo11	2.4	1.1
AK043005	AK043005	2.9	1.2	NM_177677	Dnajc5 g	2.4	1.3
NM_025478	Isoc1	2.9	1.1	NM_026972	Cd209b	2.4	1.2
NM_010575	Itga2b	2.9	1.2	NM_145227	Oas2	2.4	1.2
BC051162	ENSMUST00000067474	2.9	1.2	NM_008332	Ifit2	2.4	1.3
AK005544	Sel1 h	2.9	1.3	NM_018738	Igtp	2.4	1.3
X03802	Tcrg-C	2.9	1.3	AK050249	AK050249	2.4	1.2
TC1410591	TC1410591	2.9	1.2	NM_001002786	9830134C10Rik	2.4	1.2
NM_009662	Alox5	2.8	1.2	AK086785	AK086785	2.4	1.2
NM_021464	Ptprt	2.8	1.3	AK088666	Igh-6	2.4	1.3
NM_027561	4632415L05Rik	2.8	1.1	BC004622	Gas5	2.4	1.3
AK035046	AK035046	2.8	1.1	AK050412	1810008I18Rik	2.4	1.3
AK088414	Cd8a	2.8	1.2	NM_011983	Homer2	2.4	1.2
NM_009854	Cd7	2.8	1.2	NM_130880	Otud7a	2.4	1.2
NM_028176	Cda	2.8	1.2	NM_010583	Itk	2.3	1.2
NM_172523	Slc18a2	2.8	1.2	NM_145226	Oas3	2.3	1.2
AK164165	Cd47	2.8	1.1	AK034139	Dnahc5	2.3	1.3
NM_010470	Hp1bp3	2.7	1.2	NM_011065	Per1	2.3	1.2
NM_009858	Cd8b1	2.7	1.2	NM_009251	Serpina3 g	2.3	1.2
NM_133871	Ifi44	2.7	1.3	NM_007587	Calca	2.3	1.2
XM_129603	Tdrd5	2.7	1.3	NM_010177	Fasl	2.3	1.2
AK163452	Aldh2	2.7	1.3	NM_018746	Itih4	2.3	1.2
AK034237	Slc4a8	2.7	1.2	NM_010531	Il18bp	2.3	1.2
NM_007972	F10	2.7	1.2	XM_138240	LOC238395	2.3	1.2
NM_008090	Gata2	2.7	1.2	NM_133888	Smpd13b	2.3	1.2
NM_172648	Ifi205	2.7	1.2	AK079989	Air	2.3	1.1
AJ426449	Spink5	2.7	1.3	NM_010330	Emb	2.3	1.1
NM_153484	Tef	2.7	1.3	NM_007652	Cd59a	2.3	1.1
NM_145227	Oas2	2.7	1.3	NM_011983	Homer2	2.3	1.1
AK084979	2010007H06Rik	2.7	1.3	NM_021718	Ms4a4b	2.3	1.1
AK162987	AK162987	2.7	1.3	NM_173047	Cbr3	2.3	1.1
AK036477	AK036477	2.7	1.3	NM_008332	Ifit2	2.3	1.3
NM_033616	Csprs	2.7	1.2	NM_012009	Sh2d1b1	2.2	1.2
BC024498	Tm6 sf2	2.6	1.2	NM_009850	Cd3 g	2.2	1.1
NM_009662	Alox5	2.6	1.2	NM_030696	Slc16a3	2.2	1.1
NM_019577	Ccl24	2.6	1.2	NM_009985	Ctsw	2.2	1.2
NM_133238	Cd209a	2.6	1.2	BI692008	BI692008	2.2	1.2
NM_015783	Isg15	2.6	1.3	XM_489019	LOC433637	2.2	1.2
NM_009662	Alox5	2.6	1.1	NM_009375	Tgn	2.2	1.2
NM_008090	Gata2	2.6	1.1	NM_145634	Cd300lf	2.2	1.1
NM_011109	Pla2 g2d	2.6	1.1	NM_170727	Scgb3a1	2.2	1.2
AK047983	C130026I21Rik	2.6	1.2	NM_181328	Slc25a29	2.2	1.2
NM_001033335	Serpina3f	2.6	1.3	NM_009635	Avil	2.2	1.2
NM_009253	Serpina3m	2.6	1.2	NM_174876	Impg2	2.2	1.2
AK007434	1810011H11Rik	2.6	1.2	NM_029419	9130022K13Rik	2.2	1.1
NM_177794	Tmem26	2.6	1.2	AK037578	Zfr	2.2	1.2
BC098210	Pla2 g4b	2.6	1.2	NM_029419	9130022K13Rik	2.2	1.2
NM_008458	Serpina3c	2.5	1.2	AK147540	Apob	2.2	1.1
AK085279	E230002P03Rik	2.5	1.3	NM_010796	Mgl1	2.2	1.1
XR_003675	LOC672028	2.5	1.2	AK138790	AK138790	2.2	1.1
NM_025997	2610204K14Rik	2.5	1.3	AK147540	Apob	2.2	1.1
AK008551	2010309G21Rik	2.5	1.3	NM_023612	Esm1	2.2	1.2
NM_177158	5830482F20Rik	2.5	1.1	C77713	C77713	2.2	1.2
NM_008987	Ptx3	2.5	1.3	NM_029239	Prkcn	2.2	1.2
NM_013637	Prr1	2.5	1.3	NM_009911	Cxcr4	2.2	1.2
NM_183367	Sytl3	2.5	1.3	NM_015812	Rgs6	2.2	1.2
AK044380	AK044380	2.5	1.3	NM_026516	2810417M05Rik	2.2	1.1
NM_029932	9830002I17Rik	2.5	1.1	NM_023124	H2-Q8	2.2	1.2

Accession ID	Gene Symbol	Fold Change	SD	Accession ID	Gene Symbol	Fold Change	SD
NM_012048	Polk	2.1	1.2	AK048420	Fzd2	-2.1	1.2
NM_009477	Upp1	2.1	1.2	NM_198429	Nfatc1	-2.1	1.1
AJ344341	Vill	2.1	1.2	NM_026127	4833420G17Rik	-2.1	1.1
NM_010180	Fbln1	2.1	1.2	NM_009810	Casp3	-2.1	1.1
NM_016704	C6	2.1	1.2	NM_029341	Capsl	-2.1	1.2
AK083703	E430024P14Rik	2.1	1.2	NM_030172	2610021K21Rik	-2.1	1.2
NM_024440	Derl3	2.1	1.2	NM_028113	2600011E07Rik	-2.2	1.2
NM_145581	Siglecf	2.1	1.2	AK005675	1700006H03Rik	-2.2	1.3
AK049236	6030465E24Rik	2.1	1.2	NM_008360	Il18	-2.2	1.2
NM_008987	Ptx3	2.1	1.2	NM_133818	AI597479	-2.2	1.2
NM_181328	Slc25a29	2.1	1.2	NM_172203	Nox1	-2.2	1.2
BF683009	BF683009	2.1	1.2	NM_026069	Rpl37	-2.2	1.2
NM_013731	Sgk2	2.1	1.2	NM_026286	Ftmt	-2.2	1.2
NM_139141	Zfp192	2.1	1.2	NM_133217	Bcdo2	-2.2	1.2
BC052824	Cd247	2.1	1.1	AK140151	Gfap	-2.2	1.2
NM_134164	Syt12	2.1	1.1	NM_001013373	Tmprss13	-2.2	1.2
NM_011027	P2rx7	2.1	1.1	AK076671	AK076671	-2.2	1.2
NM_027222	2010001M09Rik	2.1	1.2	AK035414	Ddr2	-2.2	1.2
NM_145209	Oasl1	2.1	1.2	NM_007620	Cbr1	-2.2	1.1
NM_020279	Ccl28	2.1	1.2	NM_028667	D3Ertd751e	-2.3	1.1
NM_009099	Trim30	2.1	1.2	NM_178886	Ldlrad3	-2.3	1.2
TC1451388	TC1451388	2.1	1.2	NM_001013022	2010001J22Rik	-2.3	1.2
NM_012032	Serinc3	2.1	1.2	AK087898	AK087898	-2.3	1.3
NM_013698	Txk	2.1	1.1	NM_025943	Dzip1	-2.3	1.2
NM_144512	Slc6a13	2.1	1.1	XM_485258	Mtap9	-2.3	1.2
NM_013487	Cd3d	2.1	1.1	XM_483917	ENSMUST00000020090	-2.3	1.2
XM_484710	Mocos	2.1	1.1	NM_175535	Arhgap20	-2.3	1.1
NM_207208	Ca6	2.1	1.2	NM_178218	Hist3 h2a	-2.3	1.1
AK041725	D030041N04Rik	2.1	1.2	NM_007749	Cox7c	-2.3	1.1
NM_010831	Snf1lk	2.1	1.2	NM_172825	Gpr128	-2.3	1.1
NM_134041	4930427A07Rik	2.0	1.2	XM_981216	LOC666048	-2.3	1.2
AK153588	E230001N04Rik	2.0	1.2	NM_008918	Ppy	-2.3	1.2
AK028129	Hist2 h2aa2	2.0	1.2	NM_007489	Arntl	-2.3	1.3
NM_021718	Ms4a4b	2.0	1.1	NM_011794	Bpnt1	-2.3	1.2
NM_177823	Ubash3a	2.0	1.1	AK089867	AK089867	-2.3	1.2
NM_010587	Itsn1	2.0	1.1	NM_007694	Chgb	-2.3	1.2
NM_010689	Lat	2.0	1.1	NM_010298	Glrb	-2.3	1.2
NM_009283	Stat1	2.0	1.2	AK155758	C920006O11Rik	-2.4	1.1
NM_173036	Gpr97	2.0	1.2	NM_028189	B3 gnt3	-2.4	1.1
BC056974	Cyfip2	2.0	1.2	AK088810	Dclre1c	-2.4	1.2
NM_009259	Spn	2.0	1.1	AK076318	4732419C18Rik	-2.4	1.2
NM_022026	Aqp9	2.0	1.1	NM_007693	Chga	-2.4	1.1
XM_484710	Mocos	2.0	1.1	BC058790	A930031D07Rik	-2.4	1.1
NM_011527	Tal1	2.0	1.1	U21674	Tcte3	-2.4	1.1
AK085208	Lrba	2.0	1.2	NM_177003	9630033F20Rik	-2.4	1.2
AK079745	AI449175	-2.0	1.2	NM_177605	Pdzd7	-2.4	1.2
AK082461	Hgf	-2.0	1.2	NM_001024849	LOC329575	-2.4	1.1
NM_026592	B230118H07Rik	-2.0	1.1	NM_009380	Thrb	-2.4	1.1
AK006263	ENSMUST00000023427	-2.0	1.1	NM_001039552	9030025P20Rik	-2.4	1.2
NM_025807	Slc16a9	-2.0	1.1	NM_207298	Ceecam1	-2.4	1.2
AK122246	D130043K22Rik	-2.0	1.2	TC1465377	TC1465377	-2.4	1.2
AK078248	AK078248	-2.1	1.2	NM_173782	4631402N15Rik	-2.4	1.3
NM_001031808	Mrpl41	-2.1	1.0	NM_011927	Ceacam9	-2.4	1.2
NM_008729	Cttnnd2	-2.1	1.2	NM_026056	Cap2	-2.5	1.1
NM_080285	Cttnbp2	-2.1	1.2	NM_146630	Olfr123	-2.5	1.3
NM_001001488	Atp8b1	-2.1	1.1	NM_177898	Nek5	-2.5	1.2
NM_011804	Creg1	-2.1	1.1	XM_355539	Camta1	-2.5	1.1
AK156842	Zfp236	-2.1	1.1	XM_484752	Zfp236	-2.5	1.1
NM_148937	Plcd4	-2.1	1.2	NM_133903	Spon2	-2.5	1.2
AK079868	AK079868	-2.1	1.2	AK007397	Adh6a	-2.5	1.2
NM_133776	Gpr110	-2.1	1.2	NM_194058	Nalp9b	-2.5	1.3
BC035277	D1Ertd471e	-2.1	1.1	NM_026056	Cap2	-2.5	1.1
NM_018769	Dfna5 h	-2.1	1.1	NM_001039552	9030025P20Rik	-2.5	1.2
TC1522631	TC1522631	-2.1	1.2	NM_170778	Dpyd	-2.5	1.2
AK039139	Tfg	-2.1	1.1	NM_134130	Abhd3	-2.5	1.3

Accession ID	Gene Symbol	Fold Change	SD	Accession ID	Gene Symbol	Fold Change	SD
AK158826	Thrb	-2.5	1.1	NM_013500	Hapln1	-3.6	1.3
NM_015825	Sh3bgr	-2.6	1.1	NM_007739	Col8a1	-3.6	1.2
NM_011762	Zfp59	-2.6	1.2	AK013921	LOC627905	-3.6	1.1
NM_008949	Psmc3ip	-2.6	1.1	NM_026127	4833420G17Rik	-3.6	1.1
NM_011794	Bpnt1	-2.6	1.2	NM_153193	Hsd3b2	-3.6	1.4
AK078743	Hmgcs1	-2.6	1.2	AK045953	Usp53	-3.7	1.4
AK053189	AK053189	-2.6	1.3	NM_028089	Cyp2c55	-3.8	1.4
NM_007734	Col4a3	-2.6	1.3	AK041002	Tubb6	-3.8	1.2
AK034929	AK034929	-2.7	1.1	AK086129	AK086129	-3.8	1.3
NM_026716	Syncn	-2.7	1.3	AK082018	AK082018	-3.9	1.5
NM_029813	2210418O10Rik	-2.7	1.2	AK010876	5730409G07Rik	-4.0	1.2
BC059210	2210418O10Rik	-2.7	1.1	NM_172812	Htr2a	-4.1	1.4
AK031899	Gls	-2.7	1.3	AJ005350	Zfp125	-4.1	1.4
NM_013500	Hapln1	-2.7	1.2	AK015310	4930434F21Rik	-4.2	1.4
BC042711	LOC626832	-2.7	1.1	NM_145509	5430435G22Rik	-4.2	1.2
NM_080563	Rnf144	-2.7	1.3	XM_912173	LOC636687	-4.3	1.1
NM_024474	Emid2	-2.7	1.2	BC086760	2610005L07Rik	-4.3	1.0
AK005868	1700011I03Rik	-2.8	1.3	TC1514537	TC1514537	-4.4	1.2
AK016657	Ttc25	-2.8	1.3	AK014446	Pvr	-4.5	1.3
AK083155	ENSMUST00000047697	-2.8	1.3	NM_001024708	LOC436177	-4.8	1.0
NM_008868	Pla2_g2c	-2.8	1.2	AK019912	5330426P16Rik	-4.8	1.2
XM_977373	AK220484	-2.8	1.3	NM_011619	Tnnt2	-4.8	1.4
NM_008293	Hsd3b1	-2.8	1.3	AK134636	2610005L07Rik	-4.9	1.1
NM_133903	Spon2	-2.8	1.2	NM_001012306	Hsd3b3	-4.9	1.1
AK049483	Nmt2	-2.8	1.2	NM_001033456	2610005L07Rik	-4.9	1.1
AK030674	Col8a1	-2.9	1.2	AK003102	1810011O10Rik	-5.0	1.2
AK148276	Slc11a2	-2.9	1.2	AK050117	AK050117	-5.0	1.3
NM_016847	Avpr1a	-2.9	1.2	AK032176	ENSMUST00000041403	-5.3	1.5
NM_201531	Kcnf1	-2.9	1.2	NM_009866	Cdh11	-5.8	1.1
AK013921	LOC627905	-2.9	1.1	AK018404	4930429M06Rik	-5.5	1.2
NM_026480	2410146L05Rik	-2.9	1.3	NM_001024708	LOC436177	-6.4	1.3
XM_129027	Cep76	-2.9	1.1	NM_178671	Ubx3	-6.4	1.2
NM_001033039	1190002J23Rik	-2.9	1.2	AK037592	AK037592	-6.5	1.3
BC067070	4932415G12Rik	-2.9	1.4	NM_001029848	LOC574530	-6.7	1.7
NM_011880	Rgs7	-2.9	1.2	NM_175683	Dclre1c	-6.8	1.2
NM_008949	Psmc3ip	-2.9	1.2	NM_153193	Hsd3b2	-7.1	1.7
NM_011061	Padi4	-2.9	1.2	NM_001033286	Slc30a10	-7.2	1.3
AK014177	3110045C21Rik	-3.0	1.3	BC022221	Usp53	-7.5	1.1
NM_146126	Sord	-3.0	1.4	NM_207531	E030025L21Rik	-9.0	1.5
NM_201619	Nr1_h5	-3.0	1.2	AK032413	1110039F03Rik	-9.6	1.2
NM_177386	Sfmbt2	-3.0	1.4	AK081879	LOC547150	-9.8	1.2
NM_008067	Gabra3	-3.0	1.3	NM_001002900	Yghl1-4	-10	1.4
AK034126	9330158F14Rik	-3.0	1.3	NM_029847	Arsk	-11	1.5
AK037771	Ubr1	-3.1	1.4	AK083849	AK083849	-16	2.2
NM_001024708	LOC436177	-3.1	1.1	NM_175155	Sash1	-17	1.5
BC055394	Ugcgl2	-3.1	1.4	AK015977	4930535E02Rik	-20	2.4
XM_912670	Mgat5	-3.1	1.1	NM_001033286	Slc30a10	-42	1.5
NM_173431	1700047E16Rik	-3.1	1.3	NM_013541	Gstp1	-212	1.4
XM_144099	Myom3	-3.1	1.3	NM_013541	Gstp1	-711	1.6
NM_001033456	2610005L07Rik	-3.1	1.2				
NM_016960	Ccl20	-3.2	1.3				
NM_175447	LOC215714	-3.2	1.4				
XM_898153	Cttnbp2	-3.2	1.4				
NM_025943	Dzip1	-3.3	1.3				
AK045433	Rsrc1	-3.3	1.3				
NM_007847	Defcr-rs2	-3.3	1.3				
NM_026084	3110070M22Rik	-3.3	1.3				
NM_001039244	LOC633640	-3.3	1.2				
NM_175155	Sash1	-3.3	1.3				
XM_001004301	LOC668030	-3.4	1.3				
NM_010762	Mal	-3.4	1.4				
AK043729	lars2	-3.4	1.4				
NM_198415	Ckmt2	-3.4	1.3				
NM_172613	Atp13a4	-3.5	1.4				
NM_025943	Dzip1	-3.5	1.3				

All genes differentially expressed in *Gstp*^{-/-} colon relative to *Gstp*^{+/+} colon controls. Colon RNA from three male 10 week old and three female 10 week old mice of the same genotype were used for microarray analysis. The experiments were carried out with the RNA from a single mouse on a single microarray. The results shown are the averages of the six microarrays (three male and three female); the standard deviation is given in the right-hand column. Up-regulated genes had a level > 2 times greater than that of wild-type colon tissue. Genes classified as down-regulated had a level < 2 of wild-type colon tissue.

Table S2. Top 10 pathway enrichment results for differentially expressed genes in the distal colon of *Gstp*^{-/-} mice relative to *Gstp*^{+/+} mice

Rank	Pathway
1	Immune response: CD16 signaling in NK cells
2	Immune response: PIP3 signaling in B lymphocytes
3	Immune response: Role of DAP12 receptors in NK cells
4	Immune response: Immunological synapse formation
5	Immune response: TCR and CD28 co-stimulation in activation of NF-κB
6	Immune response: NFAT in immune response
7	Immune response: ICOS-ICOSL pathway in T-helper cell
8	Immune response: CXCR4 signaling via second messenger
9	Immune response: Antigen presentation by MHC class I
10	Immune response: CD28 signaling

Table S3.

Accession ID	Symbol	Fold Change	SD	Accession ID	Symbol	Fold Change	SD
NM_008581	Mela	178	3.3	NM_008196	Gzmk	4.7	1.4
NM_177744	9030421J09Rik	169	1.7	NM_029627	Ly6k	4.7	1.2
AK017277	5430405N12Rik	83	1.2	NM_028815	Lrriq2	4.7	1.4
NM_010782	Mcpt9	76	1.3	AK084367	AK084367	4.5	1.2
AK136384	AK136384	51	1.1	AB081756	Bclp2	4.5	1.4
NM_008570	Mcpt1	48	1.7	NM_019577	Ccl24	4.5	1.3
NM_008571	Mcpt2	47	1.7	NM_175271	Gpr23	4.4	1.3
NM_010779	Mcpt4	40	1.5	NM_138654	AF397014	4.3	1.3
NM_010370	Gzma	40	1.5	NM_008370	Il5ra	4.3	1.4
NM_010779	Mcpt4	31	1.5	AK041055	AK041055	4.3	1.1
BQ938713	Pla2 g2a	19	2.0	NM_009252	Serpina3n	4.3	1.5
NM_133353	Oosp1	19	1.3	NM_010780	Cma1	4.3	1.2
NM_175391	2210421G13Rik	17	1.4	NM_010780	Cma1	4.2	1.2
AK145339	Pla2 g4c	17	2.3	XM_143619	4833413O15Rik	4.2	1.4
AK034071	AK034071	16	1.6	NM_001033335	Serpina3f	4.2	1.3
NM_133353	Oosp1	16	1.3	XM_487606	1700027L20Rik	4.2	1.5
BC030896	Pdgd	15	1.7	NM_008399	Itgae	4.2	1.1
NM_019779	Cyp11a1	14	1.2	AK040776	AK040776	4.1	1.5
NM_007753	Cpa3	14	1.4	NM_130456	Nphs2	4.1	1.3
NM_019779	Cyp11a1	13	1.2	AK085190	D530004J12Rik	4.1	1.3
NM_080288	Elmo1	12	1.2	AK087768	E330018M18Rik	4.1	1.3
AK088994	AK088994	12	1.3	AK033677	2210010C17Rik	4.0	1.3
NM_010604	Kcnj16	12	1.6	AK085279	E230002P03Rik	4.0	1.3
NM_013748	Clnk	11	1.4	NM_019494	Cxcl11	4.0	1.4
NM_010604	Kcnj16	10	1.6	NM_130905	Cd209e	4.0	1.4
NM_011474	Spr2 h	10	1.5	NM_028443	3110032G18Rik	4.0	1.3
NM_010184	Fcer1a	9.6	1.2	NM_001033335	Serpina3f	3.9	1.3
XM_618738	Lats1	9.4	1.2	NM_021283	Il4	3.9	1.2
NM_177820	9130218O11Rik	8.9	1.3	NM_145457	Paip1	3.9	1.2
NM_010326	Gp1ba	8.8	1.3	NM_172944	Itgae	3.8	1.1
AK016931	4933426G20Rik	8.7	1.3	AK019824	4930581F22Rik	3.8	1.5
NM_009178	St3 gal4	8.5	1.8	NM_010743	Il1r1	3.8	1.3
NM_032541	Hamp1	8.2	1.4	NM_130904	Cd209d	3.8	1.2
NM_013542	Gzmb	8.2	1.4	XM_978459	1110067M19Rik	3.7	1.3
NM_001025307	Stx3	8.2	1.4	AK047982	Rtn4	3.7	1.4
NM_175391	2210421G13Rik	8.2	1.3	AK033022	AK033022	3.7	1.4
NM_022884	Bhmt2	7.8	1.6	NM_007587	Calca	3.7	1.2
NM_010604	Kcnj16	7.5	1.5	NM_146820	Olfr655	3.6	1.4
NM_008324	Indo	7.4	1.6	NM_023137	Ubd	3.6	1.2
NM_007482	Arg1	7.3	1.4	NM_172523	Slc18a2	3.6	1.2
NM_009178	St3 gal4	7.3	1.7	AK034139	Dnahc5	3.5	1.2
NM_021503	Myoz2	7.1	1.4	NM_177912	AI987692	3.5	1.2
NM_013516	Ms4a2	7.0	1.2	AK053505	Spire1	3.5	1.4
NM_001040201	BC023105	7.0	1.6	AK033959	Lpin2	3.5	1.4
AK041235	Igh-4	6.9	1.7	NM_021718	Ms4a4b	3.5	1.2
AK041235	Igh-4	6.7	1.7	NM_011579	Tgtp	3.4	1.4
NM_019577	Ccl24	6.6	1.3	NM_008987	Ptx3	3.4	1.3
XM_978574	1700124P09Rik	6.4	1.2	NM_013654	Ccl7	3.4	1.2
X87228	Igh-4	6.4	1.7	NM_001013783	RP23-273O7.4	3.4	1.4
NM_009114	S100a9	6.3	1.6	NM_011990	Slc7a11	3.4	1.2
AK170776	ENSMUST00000066907	6.0	1.1	AJ294737	ENSMUST00000003582	3.4	1.2
NM_001025602	Il1r1	5.9	1.2	NM_007972	F10	3.4	1.2
AK154323	Map4k2	5.9	1.3	NM_201645	Ugt1a1	3.4	1.4
NM_001033177	Krt76	5.8	1.3	AK136456	AI451617	3.4	1.3
NM_029018	Cd200r3	5.6	1.4	BC030679	Cd8a	3.3	1.3
AK033329	AK033329	5.6	1.1	AK137098	Stx3	3.3	1.2
AK090155	Pick1	5.5	1.5	BC038320	AW986112	3.3	1.4
NM_206973	Gpr152	5.5	1.5	NM_175271	Gpr23	3.3	1.2
AF144968	ENSMUST00000089795	5.4	1.6	NM_009264	Spr1a	3.3	1.3
AK054077	AI314180	5.2	1.3	NM_001024468	Bcat1	3.3	1.4
NM_145457	Paip1	5.2	1.3	NM_009662	Alox5	3.3	1.2
NM_015819	Hs6 st2	5.1	1.2	AK008696	2210010C17Rik	3.3	1.3
NM_053113	Ear11	5.0	1.3	AK034984	2010316F05Rik	3.3	1.3
NM_007695	Chi3l1	4.9	1.3	NM_172727	D330028D13Rik	3.3	1.3
XM_001003829	LOC193676	4.9	1.3	NM_177544	Ang4	3.2	1.4
NM_013650	S100a8	4.8	1.6	NM_009662	Alox5	3.2	1.2
AK019808	ENSMUST00000056619	4.8	1.1	NM_029239	Prkcn	3.2	1.2
NM_026184	Ero11b	4.8	1.3	NM_029662	Mfsd2	3.2	1.2
AK018656	Fer114	4.7	1.2	NM_010671	Krtap13	3.2	1.3
NM_178697	Cla5	4.7	1.3	AK044380	AK044380	3.2	1.3
NM_172523	Slc18a2	4.7	1.2	AK035520	9530060I07	3.2	1.2
				AK035046	AK035046	3.2	1.1

Accession ID	Symbol	Fold Change	SD	Accession ID	Symbol	Fold Change	SD
NM_011913	Vmd2	3.2	1.2	AK034237	Slc4a8	2.6	1.2
NM_138654	AF397014	3.2	1.2	BI692008	BI692008	2.6	1.2
NM_031168	Il6	3.2	1.2	NM_025478	Isoc1	2.6	1.1
AK088370	Ssb	3.2	1.3	NM_194336	Mpa2l	2.6	1.3
AK017935	5830416P10Rik	3.1	1.3	NM_025681	Lix1	2.6	1.2
AK087182	9130023D20Rik	3.1	1.3	NM_008090	Gata2	2.6	1.2
NM_013580	Ldhc	3.1	1.3	AK007796	1810046K07Rik	2.6	1.2
NM_175181	2600010E01Rik	3.1	1.3	NM_008530	Ly6f	2.6	1.2
NM_008337	Ifng	3.1	1.4	NM_028176	Cda	2.6	1.2
NM_001002786	9830134C10Rik	3.1	1.2	NM_199468	Zcchc5	2.5	1.2
NM_177742	BC050188	3.1	1.3	NM_008090	Gata2	2.5	1.1
NM_033079	D6Mm5e	3.1	1.3	AK079958	AK079958	2.5	1.2
NM_172727	D330028D13Rik	3.1	1.3	NM_012046	Spo11	2.5	1.1
NM_021443	Ccl8	3.1	1.2	NM_010846	Mx1	2.5	1.3
NM_013654	Ccl7	3.1	1.3	XR_003675	LOC672028	2.5	1.2
NM_021386	Cldn10	3.1	1.3	NM_017373	Nfil3	2.5	1.2
NM_026993	Ddah1	3.1	1.4	NM_181595	Ppp1r9a	2.5	1.2
NM_009662	Alox5	3.1	1.1	NM_177794	Tmem26	2.5	1.2
NM_007782	Csf3r	3.0	1.2	AK037292	AK037292	2.5	1.3
NM_198297	Trat1	3.0	1.2	NM_007954	Es1	2.5	1.2
AK051483	AK051483	3.0	1.3	NM_026328	Reg4	2.5	1.2
NM_019740	Foxo3a	3.0	1.3	AK037559	Elk4	2.5	1.3
BC004622	Gas5	3.0	1.2	NM_010531	Il18bp	2.5	1.2
NM_010575	Itga2b	3.0	1.2	NM_013653	Ccl5	2.5	1.3
NM_021396	Pdcd1lg2	3.0	1.2	NM_022881	Rgs18	2.4	1.3
XM_129603	Tdrd5	3.0	1.2	NM_025777	9030623N16Rik	2.4	1.1
NM_009977	Cstf	3.0	1.1	NM_029419	9130022K13Rik	2.4	1.1
AK036984	Tnfrsf21	3.0	1.2	AK044261	6430601A21Rik	2.4	1.2
NM_008337	Ifng	3.0	1.3	NM_008332	Ifit2	2.4	1.2
NM_028416	Kremen2	3.0	1.4	NM_011216	Ptpro	2.4	1.2
AK079989	Air	3.0	1.1	XM_905096	LOC631323	2.4	1.3
NM_145581	Siglec f	2.9	1.2	AK054519	AK054519	2.4	1.3
AK161130	4933439C20Rik	2.9	1.1	AK050122	BC020489	2.4	1.3
AK088128	Cd8a	2.9	1.2	NM_007781	Csf2rb2	2.4	1.1
NM_183194	9930109F21Rik	2.9	1.2	NM_145684	Alox12e	2.4	1.1
AK047983	C130026I21Rik	2.9	1.2	NM_008332	Ifit2	2.4	1.2
NM_010781	Mcpt6	2.9	1.3	NM_009635	Avil	2.4	1.2
XR_002113	LOC667984	2.9	1.2	NM_011463	Spink4	2.4	1.2
NM_031378	Mlze	2.9	1.2	NM_020008	Clec7a	2.4	1.2
NM_010927	Nos2	2.8	1.4	BC060266	Ddah1	2.4	1.2
NM_181596	Retnlg	2.8	1.4	NM_011105	Pkdrej	2.4	1.1
NM_011990	Slc7a11	2.8	1.3	BC051162	ENSMUST00000067474	2.4	1.2
AK038580	AK038580	2.8	1.3	AK145182	A1838057	2.4	1.3
NM_001034037	1700024G13Rik	2.8	1.2	BC033508	Ccl5	2.4	1.1
NM_001001495	9030611K07Rik	2.8	1.1	NM_027561	4632415L05Rik	2.4	1.1
AK031009	AK031009	2.8	1.2	AK005698	ENSMUST00000075658	2.3	1.2
AK083703	E430024P14Rik	2.8	1.2	NM_207208	Clca6	2.3	1.2
NM_031367	H28	2.8	1.4	NM_015812	Rgs6	2.3	1.2
AK018043	5830468K08Rik	2.8	1.3	AK013531	2900016B01Rik	2.3	1.2
NM_010662	Krt13	2.8	1.3	CA559477	CA559477	2.3	1.2
NM_020509	Retnla	2.8	1.3	NM_018729	Cd244	2.3	1.1
BC063057	Lix1	2.7	1.2	NM_020279	Ccl28	2.3	1.1
NM_145634	Cd300lf	2.7	1.1	NM_175549	Robo2	2.3	1.1
TC1487745	TC1487745	2.7	1.2	AK164165	Cd47	2.3	1.1
AK088414	Cd8a	2.7	1.2	NM_008330	Ifi47	2.3	1.1
AK033359	AK033359	2.7	1.3	XM_001003685	Gm1752	2.3	1.2
NM_009556	Zfp42	2.7	1.3	NM_144512	Slc6a13	2.3	1.1
AJ426449	Spink5	2.7	1.3	AK048349	AK048349	2.3	1.2
NM_029932	9830002117Rik	2.7	1.1	BC092269	Ighg	2.3	1.3
NM_020509	Retnla	2.7	1.2	NM_173036	Gpr97	2.3	1.2
NM_029239	Prkcn	2.7	1.2	NM_133888	Smpdl3b	2.3	1.2
NM_009251	Serpina3 g	2.7	1.2	NM_174876	Impg2	2.3	1.2
NM_173047	Cbr3	2.6	1.1	NM_009896	Socs1	2.3	1.2
NM_009549	Zfp185	2.6	1.2	NM_054084	Calcb	2.3	1.2
NM_020268	Klk1b27	2.6	1.3	NM_207529	A430093F15Rik	2.3	1.2
NM_016964	Stag3	2.6	1.3	AK042301	Nebi	2.3	1.1
NM_010555	Il1r2	2.6	1.2	NM_144512	Slc6a13	2.3	1.1
NM_027889	Vps11	2.6	1.2	NM_008620	Mpa2	2.3	1.3
NM_010846	Mx1	2.6	1.3	NM_134041	4930427A07Rik	2.3	1.2
NM_017373	Nfil3	2.6	1.2	AK173009	Zfp294	2.2	1.2
NM_008987	Ptx3	2.6	1.2	NM_133871	Ifi44	2.2	1.2
NM_198297	Trat1	2.6	1.2	NM_009477	Upp1	2.2	1.2

Accession ID	Symbol	Fold Change	SD	Accession ID	Symbol	Fold Change	SD
NM_007576	C4bp	2.2	1.1	AK147402	E330009J07Rik	2.0	1.1
NM_183367	Syt13	2.2	1.1	NM_153589	Tmem16b	2.0	1.2
NM_010531	I18bp	2.2	1.1	NM_010470	Hp1bp3	2.0	1.2
NM_013698	Txk	2.2	1.1	NM_024181	Dnajc10	2.0	1.2
TC1413093	TC1413093	2.2	1.3	NM_001039647	LOC634650	2.0	1.2
AK005544	Sel1 h	2.2	1.3	NM_008812	Padi2	2.0	1.2
NM_021718	Ms4a4b	2.2	1.1	NM_172838	Slc16a12	2.0	1.1
AK078537	AK078537	2.2	1.2	NM_009854	Cd7	2.0	1.2
AK007434	1810011H11Rik	2.2	1.2	NM_021050	Cftr	-2.0	1.1
XM_130987	Rarres1	2.2	1.2	NM_021355	Fmod	-2.0	1.1
NM_021893	Cd274	2.2	1.2	NM_181277	Col14a1	-2.0	1.1
AK032703	Anxa4	2.2	1.3	AK035414	Ddr2	-2.0	1.2
NM_134164	Syt12	2.2	1.2	NM_172825	Gpr128	-2.0	1.1
NM_133238	Cd209a	2.2	1.2	AK017269	Mfap3l	-2.0	1.2
NM_033616	Csprs	2.2	1.2	NM_180962	Cyhr1	-2.0	1.1
NM_018738	Igtp	2.2	1.3	NM_022563	Ddr2	-2.0	1.1
AK013534	Adora3	2.2	1.2	NM_027763	Trem1	-2.0	1.1
NAP043218-1	NAP043218-1	2.2	1.3	NM_001031808	Mrpl41	-2.0	1.0
NM_027495	Tmem144	2.2	1.1	NM_022014	Fn3k	-2.1	1.1
NM_009414	Tph1	2.2	1.2	NM_026127	4833420G17Rik	-2.1	1.1
NM_016704	C6	2.2	1.2	L23108	Cd36	-2.1	1.2
AK028129	Hist2 h2aa2	2.2	1.2	NM_011340	Serpinf1	-2.1	1.2
AK020954	B230104C14Rik	2.2	1.3	NM_023734	Pi16	-2.1	1.2
NM_023396	Rprm	2.2	1.1	AK160258	4933404M19Rik	-2.1	1.2
NM_009858	Cd8b1	2.2	1.2	NM_026239	Tmem35	-2.1	1.2
AK033165	AK033165	2.2	1.2	AK040611	Mrg1	-2.1	1.2
NM_009850	Cd3 g	2.2	1.1	AK147474	Mtap1a	-2.1	1.2
AK005284	Rint1	2.2	1.2	NM_026056	Cap2	-2.1	1.1
NM_026621	2810046M22Rik	2.1	1.1	AK081137	Cttnbp2	-2.1	1.2
NM_008418	Kcna3	2.1	1.3	NM_013869	Tnfrsf19	-2.1	1.2
NM_010555	Il1r2	2.1	1.2	NM_138683	Rspo1	-2.1	1.3
AK156993	Nsdhl	2.1	1.2	BC020092	BC020092	-2.1	1.1
NM_008685	Nfe2	2.1	1.2	NM_026056	Cap2	-2.1	1.1
NM_144940	Uroc1	2.1	1.3	NM_025506	2310007A19Rik	-2.1	1.2
NM_199146	AI451617	2.1	1.2	NM_007469	Apoc1	-2.1	1.3
XM_138240	LOC238395	2.1	1.2	NM_177898	Nek5	-2.1	1.2
NM_001014761	Scn2b	2.1	1.2	AK037540	Sec22a	-2.1	1.2
AK043005	AK043005	2.1	1.2	NM_172857	Exdl1	-2.2	1.2
NM_172451	Galnt6	2.1	1.1	NM_144930	AU018778	-2.2	1.2
NM_023396	Rprm	2.1	1.1	BC035277	D1Ert471e	-2.2	1.1
NM_029419	9130022K13Rik	2.1	1.1	NM_028813	Vit	-2.2	1.1
NM_009695	Apoc2	2.1	1.2	NM_145134	Spsb4	-2.2	1.2
NM_028455	3110043J09Rik	2.1	1.1	AK006813	1700056I18Rik	-2.2	1.2
NM_011027	P2rx7	2.1	1.1	NM_146630	Olf123	-2.2	1.3
AK083989	Psmc2	2.1	1.2	AK029300	1700110N18Rik	-2.2	1.2
AK132500	Krt36	2.1	1.1	NM_134065	Epdr2	-2.2	1.2
NM_008842	Pim1	2.1	1.1	XM_196478	BC038167	-2.2	1.3
AK017782	5730521K06Rik	2.1	1.2	NM_178886	Ldlrad3	-2.2	1.2
AK051067	AK051067	2.1	1.2	NM_176904	D230002A01Rik	-2.2	1.3
XM_489019	LOC433637	2.1	1.2	NM_024406	Fabp4	-2.2	1.2
NM_007954	Es1	2.1	1.1	NM_013456	Actn3	-2.2	1.2
NM_031198	Tcfec	2.1	1.1	NM_019413	Robo1	-2.2	1.1
AK129290	Rnf44	2.1	1.2	NM_013500	Hapln1	-2.2	1.2
NM_010741	Ly6c	2.1	1.2	NM_008005	Fgf18	-2.2	1.3
NM_010831	Snf1lk	2.1	1.2	NM_028903	Scara5	-2.2	1.2
NM_023124	H2-Q8	2.1	1.2	TC1465377	TC1465377	-2.2	1.2
NM_021411	Rab37	2.1	1.1	NM_007749	Cox7c	-2.2	1.2
NM_175284	Fzd10	2.1	1.1	NM_024406	Fabp4	-2.2	1.2
AK132500	Krt36	2.1	1.2	AK005675	1700006H03Rik	-2.3	1.2
NM_001024230	RP23-14F5.8	2.1	1.2	NM_207298	Ceecam1	-2.3	1.2
AK154286	Csf2rb1	2.1	1.1	NM_024406	Fabp4	-2.3	1.2
NM_011527	Tal1	2.1	1.1	NM_198429	Nfatc1	-2.3	1.1
NM_010401	Hal	2.1	1.2	NM_199021	Dpp10	-2.3	1.1
NM_008920	Prg2	2.1	1.2	AK037592	AK037592	-2.3	1.3
NM_009289	Slk	2.1	1.2	AK043132	AK043132	-2.3	1.3
XM_487606	1700027L20Rik	2.1	1.2	NM_026592	B230118H07Rik	-2.3	1.1
NM_010330	Emb	2.1	1.1	TC1435794	TC1435794	-2.3	1.1
AK030809	Grap2	2.0	1.2	NP062288	ENSMUST00000065540	-2.3	1.2
NM_024257	Hdh3	2.0	1.1	NM_009144	Sfrp2	-2.3	1.2
NM_021389	Sh3kbp1	2.0	1.1	AK004394	1110067I12Rik	-2.3	1.2
NM_172777	BC057170	2.0	1.2	AK014446	Pvr	-2.3	1.3
NM_027008	Kctd5	2.0	1.2	AK158826	Thrb	-2.3	1.1

Accession ID	Symbol	Fold Change	SD	Accession ID	Symbol	Fold Change	SD
NM_177789	Vsig4	-2.4	1.3	NM_001039244	LOC633640	-3.7	1.1
NM_001013022	2010001J22Rik	-2.4	1.2	AK014177	3110045C21Rik	-3.7	1.3
AK020667	Helz	-2.4	1.2	AK017536	5730409L17Rik	-3.8	1.4
NM_026716	Syncn	-2.4	1.2	AK008688	Cyp2c65	-3.8	1.4
NM_138595	Gldc	-2.4	1.2	NM_016847	Avpr1a	-3.8	1.2
AK132148	3321401G04Rik	-2.4	1.2	AK050117	AK050117	-3.8	1.3
NM_011196	Ptger3	-2.4	1.2	AK018404	4930429M06Rik	-3.9	1.2
NM_001001985	1110038O08Rik	-2.4	1.3	BC086760	2610005L07Rik	-3.9	1.0
NM_007620	Cbr1	-2.5	1.1	NM_176841	A430106J12Rik	-3.9	1.5
NM_010298	Glrp	-2.5	1.2	NM_007739	Col8a1	-4.0	1.2
XM_129027	Cep76	-2.5	1.1	XM_001004301	LOC668030	-4.0	1.3
AK030564	Peli2	-2.5	1.2	NM_026084	3110070M22Rik	-4.1	1.3
XM_887155	Igsf10	-2.5	1.2	NM_172613	Atp13a4	-4.2	1.4
AK083037	Ccnt1	-2.5	1.3	AK035884	Sf3b5	-4.3	1.4
NM_016694	Park2	-2.5	1.2	AK013921	LOC627905	-4.3	1.1
NM_029620	Pcolce2	-2.5	1.3	AJ005350	Zfp125	-4.4	1.3
NM_025943	Dzip1	-2.5	1.3	NM_175155	Sash1	-4.4	1.3
NM_029813	2210418O10Rik	-2.5	1.2	NM_175683	Dclre1c	-4.4	1.2
XM_485258	Mtap9	-2.5	1.2	XM_912173	LOC636687	-4.7	1.1
XM_144099	Myom3	-2.6	1.3	AK134636	2610005L07Rik	-4.7	1.1
NM_026713	Mogat1	-2.6	1.3	NM_001024708	LOC436177	-4.8	1.0
U76382	U76382	-2.6	1.3	NAP102794-1	NAP102794-1	-4.9	1.6
AK045433	Rsrc1	-2.6	1.3	NM_001033456	2610005L07Rik	-4.9	1.1
NM_177274	Negr1	-2.6	1.3	AK019912	5330426P16Rik	-5.1	1.2
NM_008949	Psmc3ip	-2.6	1.1	NM_009866	Cdh11	-5.3	1.1
NM_018769	Dfna5 h	-2.6	1.1	AK041002	Tubb6	-5.3	1.2
AK163997	AK163997	-2.6	1.3	NM_145509	5430435G22Rik	-5.5	1.2
NM_183336	Igsf1	-2.7	1.3	AK087131	AK087131	-5.7	1.6
AK034126	9330158F14Rik	-2.7	1.3	NM_011619	Tnnt2	-5.9	1.4
NM_201531	Kcnf1	-2.7	1.2	AK003102	1810011O10Rik	-6.0	1.2
AK086129	AK086129	-2.7	1.3	NM_207531	E030025L21Rik	-6.1	1.5
AK016003	4930539N22Rik	-2.7	1.4	NM_178671	Ubx3	-6.5	1.2
NM_001024708	LOC436177	-2.7	1.1	NM_145146	Afm	-6.7	1.7
NM_001011707	Cyp2c66	-2.7	1.3	XM_901598	Hs3 st2	-6.7	1.8
NM_008949	Psmc3ip	-2.7	1.2	BC022221	Usp53	-7.5	1.1
AK045826	AK045826	-2.7	1.3	NM_007845	Defcr-rs10	-8.0	1.3
AK018789	Ntrk2	-2.8	1.2	NM_001033286	Slc30a10	-8.1	1.3
NM_080285	Cttnbp2	-2.8	1.2	TC1514537	TC1514537	-8.4	1.2
NM_053262	Dhrs8	-2.8	1.2	AK081879	LOC547150	-8.9	1.2
XM_984346	LOC675694	-2.8	1.2	NM_001002900	Yghl1-4	-9.3	1.4
AK149452	9030618K22Rik	-2.8	1.3	NM_029847	Arsk	-9.3	1.5
NM_001024849	LOC329575	-2.9	1.1	NM_027504	Prdm16	-11	1.7
NAP055203-1	NAP055203-1	-2.9	1.4	AK032413	1110039F03Rik	-12	1.2
NM_177605	Pdzd7	-2.9	1.2	XM_001000961	5830417I10Rik	-13	1.8
NM_008745	Ntrk2	-2.9	1.3	NM_010855	Myh4	-13	2.2
NM_177003	9630033F20Rik	-2.9	1.2	NM_007847	Defcr-rs2	-15	1.3
NM_028089	Cyp2c55	-2.9	1.4	NM_007847	Defcr-rs2	-18	1.3
BC059210	2210418O10Rik	-3.0	1.1	NM_001033286	Slc30a10	-26	1.5
AK048420	Fzd2	-3.0	1.2	NM_175155	Sash1	-38	1.5
AK017575	5730419F03Rik	-3.0	1.4	AY040842	5830417I10Rik	-117	2.6
NM_013521	Fpr1	-3.0	1.2	NM_013541	Gstp1	-184	1.4
XM_355539	Camt1	-3.0	1.2	NM_013541	Gstp1	-490	1.6
NM_008067	Gabra3	-3.0	1.3				
NM_025943	Dzip1	-3.0	1.3				
BC042711	LOC626832	-3.1	1.1				
NM_175731	Asah3	-3.1	1.2				
AK007397	Adh6a	-3.1	1.2				
NM_009799	Car1	-3.1	1.4				
AK030674	Col8a1	-3.2	1.2				
NM_026127	4833420G17Rik	-3.2	1.1				
NM_146126	Sord	-3.3	1.4				
NM_008868	Pla2 g2c	-3.3	1.2				
AK013921	LOC627905	-3.3	1.1				
NM_015825	Sh3bgr	-3.3	1.1				
AK051244	AK051244	-3.4	1.3				
XM_898153	Cttnbp2	-3.5	1.4				
NM_207531	E030025L21Rik	-3.6	1.3				
AK043729	Iars2	-3.6	1.2				
NM_153523	Tcstv3	-3.6	1.2				
BC028441	Mosc1	-3.6	1.3				
NM_001033456	2610005L07Rik	-3.7	1.2				
AK036567	Mgat5	-3.7	1.1				

All genes differentially expressed in *Gstp*-null *Apc^{Min}* colon relative to *Gstp*-wt *Apc^{Min}* colon. Colon RNA from three male 10 week old and three female 10 week old mice of the same genotype were used for microarray analysis. The experiments were carried out with the RNA from a single mouse on a single microarray. The results shown are the averages of the six microarrays (three male and three female); standard deviation is shown in the right-hand column. Up-regulated genes had a level > 2 times greater than that of wild-type colon tissue. Genes classified as down-regulated had a level < 2 of wild-type colon tissue.

Table S4. Top 10 pathway enrichment results for differentially expressed genes in the distal colon of *Gstp*-null *Apc*^{Min} relative to *Gstp*-wt *Apc*^{Min} mice

Rank	Pathway
1	Immune response: CD16 signaling in NK cells
2	Development:TPO signalling via JAK-STAT pathway
3	Immune response: Antiviral actions of interferons
4	Immune response: CCR3 signaling in eosinophils
5	Immune response: Bacterial infections in normal airways
6	Immune response: TCR and CD28 co-stimulation in activation of NF-kB
7	Immune response: NFAT in immune response
8	Immune response: CD28 signaling
9	Immune response: Role of DAP12 receptors in NK cells
10	Immune response: Antigen presentation by MHC class I

Table S5.

Accession ID	Symbol	Fold Change	SD	Accession ID	Symbol	Fold Change	SD
AK017277	5430405N12Rik	252	1.2	NM_007969	Expi	-2.4	1.1
BC078460	A630033E08Rik	62	1.2	NM_172601	Rab2b	-2.5	1.2
NM_010201	Fgf14	29	1.7	NM_026081	Gprasp1	-2.5	1.2
NM_145457	Paip1	14	1.1	BC100555	Sox14	-2.6	1.1
NM_028815	Lrriq2	10	1.4	NM_145943	BC031781	-2.7	1.2
ENSMUST00000066907	ENSMUST00000066907	10	1.1	NM_172633	Cbln2	-2.7	1.2
NM_054088	Pnpla3	10	1.3	AK005093	Etohi1	-2.7	1.1
NM_028416	Kremen2	9.9	1.4	NM_001025568	Pde1c	-2.7	1.1
NM_177628	BC065085	8.9	1.2	NM_013900	Mfi2	-2.7	1.1
AK035714	AK035714	7.6	1.2	AK038688	A230055C15	-2.7	1.2
AK136384	AK136384	7.6	1.2	AK031268	Odz3	-2.8	1.2
XM_618738	Lats1	7.1	1.3	NM_153288	Npb	-2.8	1.2
ENSMUST00000056619	ENSMUST00000056619	7.0	1.3	AK013921	LOC627905	-2.8	1.2
NM_023879	Rpgrip1	5.5	1.3	NM_026127	4833420G17Rik	-2.9	1.1
NM_028455	3110043J09Rik	5.1	1.2	XM_001003068	Kcnt2	-2.9	1.1
NM_001013785	Akr1c19	5.0	1.2	NM_008919	Ppyr1	-2.9	1.1
AK033329	AK033329	4.1	1.2	NM_011857	Odz3	-3.0	1.1
NM_028122	Slc14a1	4.0	1.2	NM_198429	Nfatc1	-3.0	1.2
NM_145457	Paip1	3.9	1.1	AK011113	Plxnc1	-3.0	1.1
NM_027308	2210010C17Rik	3.8	1.2	NM_009866	Cdh11	-3.0	1.1
NM_177596	Gm4769	3.6	1.2	NM_001024708	LOC436177	-3.1	1.0
AK090155	Pick1	3.6	1.2	NM_175122	Rab39b	-3.1	1.2
NM_138654	AF397014	3.5	1.1	NM_178421	Nanos1	-3.2	1.2
BC049694	Cdkn3	3.5	1.2	AK041002	Tubb6	-3.2	1.1
NM_138654	AF397014	3.4	1.1	NM_172857	Exdl1	-3.2	1.2
AK041055	AK041055	3.3	1.1	BC086760	2610005L07Rik	-3.2	1.1
NM_008719	Npas2	3.3	1.1	NM_009866	Cdh11	-3.2	1.2
NM_053115	Acox2	3.0	1.2	NM_026127	4833420G17Rik	-3.4	1.1
NM_008396	Itga2	3.0	1.2	NM_023908	Slco3a1	-3.5	1.2
S57425	S57425	2.8	1.1	NM_019511	Ramp3	-3.5	1.2
NM_028769	Syvn1	2.7	1.2	NM_181728	Art3	-3.6	1.2
NM_018784	St3_gal6	2.5	1.2	AK019912	5330426P16Rik	-3.6	1.2
AK005363	1500035N22Rik	2.4	1.1	NM_134096	AW049604	-3.6	1.2
NM_146061	Arhgap8	2.3	1.1	AK002772	Pcp4l1	-3.7	1.2
NM_025517	Rtcd1	2.3	1.1	NM_138595	Gldc	-3.7	1.2
NM_025517	Rtcd1	2.3	1.1	AK029300	Vgll3	-3.8	1.2
NM_177003	9630033F20Rik	2.3	1.0	AK017641	5730446C15Rik	-3.8	1.2
NM_010587	Itsn1	2.2	1.1	BC086641	Slc44a5	-3.8	1.2
NM_027627	4931408A02Rik	2.2	1.1	BC049168	2300002D11Rik	-3.8	1.2
AK018948	Arl9	2.1	1.1	NM_026056	Cap2	-3.8	1.2
NM_028639	Ttc7	2.1	1.1	AK003102	1810011O10Rik	-3.8	1.2
NM_008255	Hmgcr	2.1	1.1	AK135586	AK135586	-3.8	1.2
XM_989409	Rbm24	2.1	1.1	AK054185	Mrpl3	-3.9	1.2
NM_153484	Tef	2.1	1.1	NM_145621	Camkv	-3.9	1.2
NM_145462	D14Erttd500e	2.0	1.1	NM_172491	D130040H23Rik	-3.9	1.2
NM_031404	Actl6b	2.0	1.1	NM_007739	Col8a1	-4.1	1.2
NM_030203	Tspyl4	-2.0	1.1	AK158826	Thrb	-4.1	1.1
NM_008394	lsgf3_g	-2.0	1.1	XM_912173	LOC636687	-4.2	1.2
NM_028245	Zfp131	-2.1	1.1	NM_138742	Nap1l3	-4.3	1.1
NM_008624	Mras	-2.1	1.1	AK013921	LOC627905	-4.3	1.2
AK030569	Dynlt1	-2.1	1.1	AK162561	3110052M02Rik	-4.3	1.2
AK013505	AK013505	-2.1	1.1	NM_177003	9630033F20Rik	-4.4	1.1
AK040984	Osbpl3	-2.2	1.1	NM_025585	1700029F12Rik	-4.5	1.1
XM_129027	Cep76	-2.2	1.1	NM_001024708	LOC436177	-4.9	1.3
NM_174868	C030011O14Rik	-2.2	1.1	NM_007867	Dlx4	-4.9	1.1
NM_177163	B330016D10Rik	-2.2	1.1	NM_026084	3110070M22Rik	-5.0	1.2
AK035414	Ddr2	-2.2	1.1	NM_001033456	2610005L07Rik	-5.2	1.2
AK083037	Ccnt1	-2.3	1.1	NM_001024708	LOC436177	-5.3	1.1
NM_021334	Itgax	-2.3	1.1	BC022221	Usp53	-5.3	1.1
NM_026880	Pink1	-2.3	1.1	NM_016694	Park2	-5.4	1.3
NM_172633	Cbln2	-2.4	1.1	TC1635888	TC1635888	-5.6	1.3
NM_016685	Comp	-2.4	1.1	NM_177049	Jph4	-5.8	1.3
NM_177167	Ppm1e	-2.4	1.1	NM_028176	Cda	-5.9	1.2
BC072607	4930505D03Rik	-2.4	1.1	NM_172628	Sh3tc2	-6.0	1.3
				NM_009866	Cdh11	-6.2	1.1

Accession ID	Symbol	Fold Change	SD
AK134636	2610005L07Rik	-6.3	1.1
AK076632	1700013E18Rik	-6.3	1.2
NM_026056	Cap2	-6.4	1.2
TC1620718	TC1620718	-6.5	1.4
NM_173442	Gcnt1	-6.7	1.3
NM_001012392	U46068	-6.9	1.3
NM_025585	1700029F12Rik	-7.0	1.1
AK014177	3110045C21Rik	-7.2	1.2
NM_183136	Spink8	-7.6	1.2
AK014446	Pvr	-7.7	1.4
AK032413	1110039F03Rik	-8.1	1.3
AK030294	BC007180	-8.2	1.3
AJ005350	Zfp125	-10	1.4
NM_007850	Defcr3	-12	1.4
NM_011880	Rgs7	-12	1.4
NM_007852	Defcr6	-13	1.4
NM_001012307	Defcr23	-14	1.4
NM_183268	Defcr20	-15	1.5
NM_175155	Sash1	-18	1.4
NM_010039	Defcr4	-20	1.5
NM_010031	Defa1	-20	1.4
AK081879	LOC547150	-26	1.3
NM_207658	Defcr22	-27	1.5
TC1686295	TC1686295	-27	1.2
NM_007848	Defcr-rs7	-437	1.6
NM_007846	Defcr-rs12	-616	1.3
NM_013541	Gstp1	-868	1.1
NM_013541	Gstp1	-1878	1.1
NM_007845	Defcr-rs10	-7979	1.3
NM_007847	Defcr-rs2	-15076	1.4
NM_007847	Defcr-rs2	-18561	1.3

All genes differentially expressed in *Gstp*-null *Apc^{Min}* adenomas relative to *Gstp*-wt *Apc^{Min}* adenomas. RNA from four adenomas from four individual mice (1 adenoma per mouse) of each genotype was used for microarray analysis. The experiments were carried out with the RNA from a single adenoma on a single microarray. The results shown are the average of the four microarrays for each genotype; standard deviation is shown in the right-hand column. Up-regulated genes had a level > 2 times greater than that of control adenoma tissue. Genes classified as down-regulated had a level < 2 of control adenoma tissue.